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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,060	12/12/2000	Janet A. Barnett	13362	3416

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EXAMINER

ALI, SYED J

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 04/21/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/735,060	Applicant(s) BARNETT ET AL.	
	Examiner Syed J Ali	Art Unit 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-8 are pending in this application.
2. The cross reference related to the application cited in the specification must be updated (i.e. update the relevant status, with PTO serial numbers or patent numbers where appropriate, on page 1, lines 7-13). The entire specification should be so revised.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following terms lack antecedent basis:

- i. "the Load Balancer Lookup Finder object" - claim 1.
- ii. "the computationally intensive services" - claim 1.
- iii. "the Results Archive" - claim 6.
- iv. "the dynamically available resources" - claim 7.
- v. "the Results Archive" - claim 8.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primak et al. (USPN 6,389,448) (hereinafter Primak) in view of Arnold et al. (USPN 6,446,070) (hereinafter Arnold).

7. As per claim 1, Primak teaches the invention as claimed, including a system for receiving and distributing user services for execution by any of a plurality of dynamically available resources registered by the system whereby a computational load of each of said services is distributed for execution among said dynamically available resources, the system comprising:

an Execution Server arranged to communicate with at least one user browser, the Execution server including an Execution Manager (col. 2 lines 30-48; col. 4 lines 27-46);

a Lookup Finder object for Load Balancers communicating an availability of Load Balancers to said Execution Manager (col. 4 lines 7-26);

at least one Load Balancer in communication with the Execution Manager and the Load Balancer Lookup Finder object (col. 3 line 49 - col. 4 line 6);

at least one Compute Server in communication with at least one Load Balancer (col. 4 lines 7-26); and

a Lookup Finder object for Compute Servers in communication with the at least one Load Balancer and the at least one Compute Server (col. 4 lines 47-62);

whereby the Execution Manager servlet waits for services to be submitted to it by the at least one user browser through the Execution Server (col. 3 lines 30-48), wherein the Execution

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Manager searches for dynamically available Load Balancers and submits the computationally intensive services to the first Load Balancer found (col. 3 line 49 - col. 4 line 6), and wherein said first Load Balancer searches for available Compute Servers to distribute the user services for execution (col. 4 lines 7-26).

Primak does not specifically teach the following limitations:

the Execution Server including a Result Manager; and

implementing functionality associated with load balancing techniques within servlets.

8. Arnold teaches the invention as claimed, including the Execution Server including a Result Manager (col. 6 lines 23-41; col. 6 line 58 - col. 7 line 11); and

implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

9. It would have been obvious to one of ordinary skill in the art to combine Primak and Arnold since the load balancing method of Primak is primarily concerned with evenly distributing a processing load across a plurality of servers, but makes no reference or recommendation as to how the results of the processing are handled. This is a significant drawback, especially in the field of distributed computing, where each server may only perform processing for a portion of a task, wherein results from one sub-task may be needed for subsequent actions. Arnold specifically addresses this point and provides a results cache for storing the processing results such that subsequent actions or methods may use the data (col. 7 lines 5-11).

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10. As per claim 2, Primak teaches the invention as claimed, including the system defined by claim 1, further including means for dynamically finding Load Balancers and Compute Servers each time a system service requires execution (col. 2 lines 32-44).

11. As per claim 3, Arnold teaches the invention as claimed, including the system defined by claim 1, wherein a Compute Server Result is provided to the Results Manager servlet for storage in a Result Archive (col. 6 line 58 - col. 7 line 11).

12. As per claim 4, Arnold teaches the invention as claimed, including the system defined by claim 3, wherein the Result Archive is in communication with a Results Finder servlet which provides a URL of a Result to the user browser via the Execution Server (col. 8 lines 1-31).

13. As per claim 5, Primak teaches the invention as claimed, including a method for executing a user service within a system by distributing a load of the service across dynamically available resources of the system, the system comprising an Execution Server, and Execution Manager, a Load Balancer Lookup Finder object, at least one Load Balancer, a Compute Server Lookup Finder object and at least one Compute Server, wherein the method comprises the steps of:

receiving a user request for execution of a service at the Execution Server (col. 3 lines 30-48);

providing the service to the Execution Manager for execution (col. 2 lines 30-48; col. 4 lines 27-46);

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searching for the at least one Load Balancer using the Load Balancer Lookup Finder object to define service load execution by the at least one Compute Server (col. 4 lines 7-26);

submitting the service to the first Load Balancer found (col. 3 line 49 - col. 4 line 6);

searching by the at least one Load Balancer for Compute Servers which are available and capable of executing some portion of the service using the Compute Server Lookup Finder object (col. 4 lines 7-26); and

distributing the service load for execution across the available Compute Servers such that each Compute Server is utilized in realizing a Result (col. 4 lines 7-26).

Primak does not specifically teach the following limitations:

implementing functionality associated with load balancing techniques within servlets.

14. Arnold teaches the invention as claimed, including implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

15. As per claim 6, Arnold teaches the invention as claimed, including the method of claim 5 further including the steps of:

directing the Result to a Results Manager servlet (col. 6 lines 23-41);

transferring the Result from the Results Manager servlet to a Result Archive (col. 6 line 58 - col. 7 line 11);

directing a pointer to the Result to a Results Finder servlet (col. 6 line 58 - col. 7 line 11);

and

transferring the pointer to the Result stored in the Results Archive to the user (col. 6 lines 23-41).

16. As per claim 7, Primak teaches the invention as claimed, including a computer readable medium having computer readable program code means embodied therein for executing a user service within a system by distributing a load of the service across the dynamically available resources of the system, the system comprising an Execution Server, and Execution Manager, a Load Balancer Lookup Finder object, at least one Load Balancer, a Compute Server Lookup Finder object and at least one Compute Server, the computer readable program code means comprising:

computer readable computer code means for receiving a user request for execution of a service at the Execution Server (col. 3 lines 30-48);

computer readable computer code means for providing the service to the Execution Manager for execution (col. 2 lines 30-48; col. 4 lines 27-46);

computer readable computer code means for searching for the at least one Load Balancer using the Load Balancer Lookup Finder object (col. 4 lines 7-26);

computer readable computer code means for submitting the service to the first Load Balancer found (col. 3 line 49 - col. 4 line 6);

computer readable computer code means for searching by the at least one Load Balancer for Compute Server Lookup Finder object for available Compute Servers capable of executing the service (col. 4 lines 7-26); and

computer readable computer code means for distributing the service load across the available Compute Servers for execution such that each Compute Server is utilized in realizing a Result (col. 4 lines 7-26).

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Primak does not specifically teach the following limitations:

implementing functionality associated with load balancing techniques within servlets.

17. Arnold teaches the invention as claimed, including implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

18. As per claim 8, Arnold teaches the invention as claimed, including the computer readable medium of claim 7 further including computer readable computer code means for directing the Result of execution to a Results Manager servlet;

computer readable computer code means for transferring the Result from the Results Manager servlet to a Result Archive (col. 6 line 58 - col. 7 line 11);

computer readable computer code means for directing a pointer to the Result in the Result archive to a Results Finder servlet (col. 6 line 58 - col. 7 line 11); and

computer readable computer code means for transferring the pointer to the Result stored in the Results Archive to the user (col. 6 lines 23-41).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6,128,279 to O'Neil et al. teaches a method of balancing a workload across a plurality of network servers.

USPN 6,393,458 to Gigliotti et al. teaches a method of distributing a request amongst a plurality of servers based on load information from a load balancer object.

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USPN 6,542,933 to Durst. Jr, et al. teaches a system of linking URLs to clients in a load balanced environment.


20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (703) 305-8106. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali
April 6, 2004



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